PACKAGING MATERIALS OF THE THAI FISH CANNING INDUSTRY

(A PRELIMINARY EVALUATION STUDY, CONDUCTED BETWEEN THE YEARS 1980 AND 1982)

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KASETSART UNIVERSITY
BANGKOK THAILAND

AUGUST, 1982

C.F.T.R.I. MYSORE

(FINAL REPORT)

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(A preliminary evaluation study, conducted between the years 1980 and 1982)

INTRODUCTION

Nutritional status is dependent upon the provision of sufficient nutrient substances and the good utilization of these nutrients. Poor status of nutrition may be caused by failures in digestion and the utilization of nutrients or it may be caused by eating food that is inadequate in the amount or kind of these nutrients.

This study relates to the latter context of the cause of poor status of nutrition, especially that which may be related to the quality of the packaging materials for the fish canning industry of Thailand. The deterioration of the nutritional quality of canned fish due to the packaging materials would have several negative impacts, namely, that which falls upon the indigenous consumers of the canned fish in terms of nutritional and/or value for expenditures along with that which falls upon the export market consumers of Thai canned fish in terms similar to indigenous Thai consumers and a consequentual loss of foreign exchange earnings from such exports for Thailand.

The public sector co-author, Miss Bulan Phithakpol, submitted the proposal which was accepted by Mr. A. Labon, as Director, on behalf of the Fishery Industries Division of FAO and provided the grant-in-aid to enable this study and evaluation. Although originally designed as a one-year project it was necessary to allow the project to over-run its time-frame, without accepting cost to over-run. Thus, this study and evaluation, FAO Fishery Industry Division Ref. No.FD 51/13.3, has been completed in the second tri-meister of 1982 with this report completed in August 1982.

METHODOLOGY

A letter, in Thai, explaining the scope and purpose of this study was sent by registered postal service, along with a questionnaire, to fish canneries seeking their cooperation and support in supplying the desired information. However, the responses did not yield utilizable information and consequent analysis of the data collec-

ted had to be totally disregarded.

A follow-up attempt with personal appearance and appeal also met with frustrating inability to support the study team with relevant data and information, therefore, this study does not contain desired qualitative and quantitative details...although information from/on the private sector is emphasized by the Editor from the private sector.

The study team has been able to collect information which may not have direct value but still reveals (indirectly) the great socio-economic importance and contributions directly to Thailand's efforts in earning foreign exchange and balancing deficit trade with certain trading partners.

INTERPRETATION OF RESULTS

The questionnaire contained quantitative questions which did not have direct costs/benefits or expenditures/incomes implication. However, since 1980 the Internal Revenue Department of the Ministry of Finance has been charged with the collection of 10-years of back taxes of all businesses and industries...through re-interpretations of revenue and customs codes...in order to boost the incomes/reserves demanded by development projects in the National Budgets along with the payments of government subsidies intended to lessen the hardship of farmers (faced with wide fluctuations of farm-gate prices) and that of the urbanized industrial and services workers (faced with higher cost of living, inflation and the poor world economic/business situtation).

Interpreting this as uncontrollable, but acceptable as a force majure, it is possible that the reluctance to fully cooperate was due to a hedging action designed to keep information out of the hands of would-be tax and duties assessors. Hedging in this sense is not a hostile attitude, but it is a clear protective and survival measure because the collection of 10-years of back-taxes due to re-interpreted revenue and customs codes can be close to a lethal blow in a market hit by high inflation rates, high production and marketing costs and changes in consumer choices due to lower net incomes available for food expenditures.

Thus, the authors present this report in the modified form, as follows:

RAW MATERIALS FOR CAN PRODUCTION

Raw materials for can production is limited to Tin Mill Black Plate (TMBP) or electrolytic tinplate. The local producer is the:

Thai Tinplate Manufacturing Company Limited

33 Moo 13,Soi Salakbandh, Poochaosmingprai Road, Phrapradaeng, Samut Prakan, Tel: 394-1671-4

Chairman	: Mr. Chamni Visvapolboon
Managing Director	: Dr. Kasem Balajiva
Established	: 1958; Employees:347
Shareholders	: Thai 60%, Japanese 40%
Total Assets	: 731.5 million baht
Annual Sales	: 1,060 million baht;
Production Volume	: 68,843 tons (1979)
Brand Name	: TTP
Member of	: The Association of Thai Industries, the South East Asia Iron and Steel Institute and the ASEAN Iron and Steel Industry Federation.
Status	: A Thai Board of Investment Promoted Industry.

The TTP manufactured meets internationally accepted standards for tinplate to be utilized in making cans for the food processing (canning) industry, with sales direct to canneries (which have their own can manufacturing plants) and to contract suppliers of cans.

CAN PRODUCTION

The contract suppliers of cans must satisfy a diverse market with different shapes and sizes,as a result these suppliers are small,

as can be seen in *Annex A* by the capital investment size of the majority of these contract suppliers. All the fish canning industries produce large amounts of cans for their own consumption while Metal Box Thailand Ltd., is the only major contract supplier of cans.

Metal Box Thailand Limited

7th Floor, Olympia Thai Bldg, 956 Rama IV Road,
Bangkok. Tel: 233-1414/6

Chairman	: Mr. Jin Divari
Managing Director	: B.R. Birley
Employees	: 441
Shareholders	: 40% Thai (Public), 60% Singaporean
Annual Sales	: 212,599,535 Baht.
Total Assets	: 140,280,660 Baht
Products	: Tinplate Cans and Aluminum Collapsible tubes

The fish canning industry of Thailand limits itself to exportable fish, thus concentrating upon the processing of Marine Fisheries Products. The canners of interest are those which appears in the list attached as *Annex B*.

An appreciation of the acceptability and important role of these Marine Fisheries processing/canning industries is possible through a closer view of the profile of some of the canning companies which appears in the list attached as *Annex C*.

BOXING OF CANNED PRODUCTS

The canned and ready for marketing fisheries products are packed in cartons which are produced locally, with the majority of cartons produced by the following automated manufacturers:

Hiang Seng Fibre Container Company Limited

389 Chua Plerng Rd., Chong Non See, Bangkok.
Tel: 286-6824-6

Chairman	: Mr. Liang Tejavibulya
Managing Director	: Mr. Suthas Tejavibulya
Employees	: 800
Shareholders	: 100% Thai
Annual Sales	: 550 million Baht/Total Assets:489 million Baht
Products	: Kraft linerboard, Corrugated medium, Multi-wall sack craft, Corrugated containers, Multi-wall sacks and Gummed Tape.

Siam Kraft Paper Company Limited

637/1 Promphan Bldg. Lard Prao Road, Bangkok,
P.O.Box 9-53. Tel: 511-4182-9

Chairman	: Mr. Chalerm Cheo-sakul
Managing Director	: Mr. Chamnan Suntornwat
Employees	: 930
Shareholders	: 100% Thai
Registered and Paid-up Capital	: 200 million Bahts/Total Assets:866 million Bahts
Annual Sales	: 939 million Bahts
Products	: Multi-wall sack Kraft, Kraft liner board, Corrugated Medium, Shopping Paper Bags, Core Paper, Multi-wall bags, Grocery bags, and Corrugated cartons.

Small carton manufacturers are also numerous, but they are not catering to just Fish Canners and Exporters...they appear as *Annex D.*

CONCLUSION

The packaging materials industry of Thailand is apparently able to supply the Thai fish canning industry with cans and cartons which meets international standards requirements (see *Annex E*), which are very stringent for human consumables. The Thai Industrial Standards Institute also contributes to the sustained canning standards of quality and consumer protection through issuance of standard certificates, after the canneries have passed a series of prescribed tests of sustained quality control results.

However, it can be noted that the proliferation of small manufacturers of cans and cartons is in response to free enterprise economy supply and demand factors. Yet, it is easily demonstrated that these small manufacturers are not cost competitive when it comes to quality controlled volume production of cans and cartons as evidenced by the presence of Metal Box Thailand Ltd. (Tinplate cans), Hiang Seng Fibre Container Co., Ltd. and Siam Kraft Paper Co., Ltd. (Cartons) which are sophisticated technology users and mass producers.

SUMMING UP

In summation, the quality of packaging materials for the fish canning industry of Thailand is competently and qualitatively met by Thai manufacturers in accordance with International Standards.

ACKNOWLEDGEMENT

The co-authors: would also like to express appreciation to the Fishery Industries Division of FAO, to Mr. A. Labon (especially) and to the Thai businesses and industries which co-operated and assisted to the best of their abilities as the situation permitted.

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ANNEX A.

List of Can Manufacturers in Thailand = 1982

NAME OF FIRMS	CAPITAL INVESTED (MILL. BAHT)	NUMBER OF EMPLOYEES	PRODUCTION VOLUME (UNITS)
IN BANGKOK			
SUNTHORN LOHAKITCH	1.856	162	2,357,035/y
PEO YONG SENG	0.4	36	1,000,000/y
KRAPONG CHAI HUAT	0.2	9	30,000/m
YONG HUAT HENG	0.1	12	40 tons/y
LUN HUAT SENG	0.1	11	84,000/y
UH-NGUAN KEE	0.16	11	30,000/y
SUNTHORN LOHA-KIJ	0.4	149	50,000/m
KIM KEE	0.1	6	30,000/m
HAW YONG HENG	0.008	4	13,000/y
P.KITCH CHAROEN	0.15	20	4,000/m
LOHA-KIJ PONG	0.2	9	50,000/m
LOHA-KIJ WATT	0.02	5	3,000/m
LOHA-KIJ CHAROEN	0.2	6	8,000/m
KIM HENG	0.1	5	10,000/m
YIN-DEE PALIT LOHA	0.4	6	2,000/d
SIN LEE	0.05	5	-
UNG SIN LEE	0.05	6	15,000/m
P.CHAROEN USAHAKHAM	0.10	29	108,000/m
POON SAPAYA LOHA-KIJ	0.50	8	18 tons/m
FAH KEE	0.02	6	120 kg./m
MENG SOON HENG FACTORY	0.25	26	810,000/m
THERACHAI USAHAKAM	2.0	25	1,682,000/y
THAICAN INDUSTRIES	1.0	44	758,000/y
MING SENG HUAT	0.1	6	1,000/m
LIM CHENG HONG	0.1	6	2,000/d
KUANG HOK CHIENG	0.01	10	96,000/y
KRAN-KHA-TAI	5.0	175	17,000/m
RUAM WATTANA USAHAKHAM	2.0	20	140 tons/m
HENG HUAI KEE	0.03	7	60,000/m
PUEY SENG	1.0	36	100,000/m
HENG NGUAN SENG	0.10	14	210,000/y
PANTAWAT LOHA-KIJ	0.13	11	750 kg/m
PRASIT LOHA-KIJ	0.13	13	100,000/m
SAHA YONG LEE	-	-	2,000/m

(cont.)

(Annex A. cont.)

NAME OF FIRMS	CAPITAL INVESTED (MILL. BAHT)	NUMBER OF EMPLOYEES	PRODUCTION VOLUME (UNITS)
IN BANGKOK			
ROYAL CAN INDUSTRY	1.00	30	550,000/m
SAHA-PAT LOHA	5.65	20	20,000/d
CHAROEN-PHOL LOHA-KIJ	0.25	5	20,000/m
POON-SAPAYA LOHA KARN-PIMM	10.00	80	500,000/m
TANG SANGUAN LOHA-KIJ	0.4	6	-
WIWAT LOHA-KARN	0.3	7	2,500/m
SAHA-TAI LOHA-KIJ	0.2024	7	950 kg/m
T.RUNG RUANG PORN	0.1548	15	40,000/m
THAI PRASIT LOHA	0.12	8	70,000/m
KRIENG SAWAT USAHAKHAM	0.19	28	20,000/m
CHAROEN USAHAKHAM	3.0	50	720,000/m
SAENG SURIYAWONGSE	0.42	11	20,000/m
SAFCOL (THAILAND) LTD.	33.8	89	2,250,000/m
METAL-CON (THAI-DAN INDUSTRIES)	0.7	35	758,000/y
CHAI CHAROEN USAHAKHAM	0.2	8	200,000/y
KUI HUAT	0.01	4	100,000/y
UNG HAH HENG	0.15	12	45,000/m
NUNTHAWAT LOHA KIJ	0.13	11	750 kg/m
IN SAMUT PRAKAN			
THE METAL BOX THAILAND	20.00	115	10 tons/d
NGUAN HUA HENG	0.35	130	482,450/m
SERM THAI USAHAKHAM	1.40	20	48 tons/y
MITR THAVORN	2.0	95	1,776 tons/y
OCEANIC CANNERY	-	-	800,000/m
IN CHONBURI			
CHITRA-CHAROEN KARN CHANG	0.709	18	12,000/y

(cont.)

(Annex A. Cont.)

NAME OF FIRMS	CAPITAL INVESTED (MILL. BAHT)	NUMBER OF EMPLOYEES	PRODUCTION VOLUME (UNITS)
IN SONGKHLA			
SIRI-CHAI OIL HAADYAI	1.56	33	720,000/y
SUNTHORN LOHA KIJ	0.235	4	-
IN NAKHON SAWAN			
TANG CHAI HUNG	0.045	3	-
IN PATTANI			
PATTANI TONG HONG HUAT	1.05	15	-

ANNEX B.

List of Marine Products Canners of Thailand: 1982

NAME OF FIRM	CAPITAL INVESTED (MILL BAHT)	NUMBER OF EMPLOYEES	PRODUCTION CAPACITY
IN BANGKOK			
THAI RUAM SIN PATANA USAHAKAM CO.LTD.	0.2	34	396,000 cans/y
LUXCO FOODS CO.LTD.	1.6	50	150,000 cans/m
THAI CANNERY CO.LTD.	5.0	-	211,500 cans/y
SAFCOL (THAILAND) LTD.	-	-	-
T.K. FOOD INDUSTRY LTD.	-	-	177,000 cases/y
THAI FOOD INDUSTRIES CO.LTD.		-	216,000 cases/y
SIAM SEA FOOD CO.LTD.	2.93	108	2,000 kg/m
IN SAMUT SAKHON			
CHAROEN USAHAKHAM CO.LTD.	1.5	30	30,000 dozens/y
UNICORD INVESTMENT CO.LTD.	-	-	27,848 cases/y
B & M CO. LTD.	-	-	810,000 cases/y
THAI UNION MANUFACTURING CO.LTD.	-	-	730,080 cases/y
PATAYA FOOD INDUSTRIES LIMITED	-	-	200,000 cases/y
PISITH LIMPICHAI, MR.	-	-	280,000 cases/y
SONGKHRAM DERDVICHAI, MR.	-	-	228,000 cases/y
POONSIN PUNG NGAN HAH USAHAKHAM CO.LTD.	3.0	-	10,000 cans/m
THAI CHAROEN (HONGKONG TAU-TAI) CO.LTD.	3.989	-	400,000 cans/m
IN PATTANI			
RUAM LAMLIANG KON-SONG THAILAND CO.LTD.	2.2	15	-
MUSLIM CANNING INDUSTRY THAILAND CO.LTD.	5.23	30	5,724 mill.cans/y

(cont.)

(Annex B. cont.)

NAME OF FIRM	CAPITAL INVESTED (MILL BAHT)	NUMBER OF EMPLOYEES	PRODUCTION CAPACITY
IN SURATTHANI			
PAN ASIA FOOD INDUSTRIES CO.LTD.	5.14	52	76,000 cases/y
ASIAN FOOD INDUSTRIAL CO.LTD.	-	-	170,000 cases/y
IN TRAT			
UA-KASEM USAHAKHAM CO.LTD.	3.5	90	1,500 tons/y
IN SAMUT PRAKAN			
LOYD & SONS CO.LTD.	4.5	106	140,000 cases/y
PREMIUM FOOD CO.LTD.	-	-	580,000 cases/y
UNION SERI CO. LTD.	46.7	304	665,900 cases/y
ROY FOOD CO. LTD.	-	-	250,000 cases/y
IN SONGKHLA			
TROPICAL CANNING CO. LTD.	-	-	244,241 cases/y
UNITED TRANSPORT CO. LTD.	-	-	187,500 cases/y
SONGKLA FOOD INDUSTRIES CO.LTD.	-	-	5,184,000 cans/y
KIANG HUAT SEA-BULL TRADING FROZEN FOOD CO.LTD.	-	-	120,000 cases/y

ANNEX C

List of Marine Products Canners of Thailand: 1982
(These Profiles are intended to illustrate their magnitude of importarce to the Thai economy.)

PAN ASIA FOOD INDUSTRY CO.,LTD. Tel. 279-7100
2nd Floor, 1193 Paholyothin Rd. Phyathai, Bangkok 4

Chairman	: Mr. Somchai Kiatsrichart
Managing Director	: Mr. Somkiat Kiatsrichart
Employees	: 1,000
Shareholders	: 85% Thai, 15% Chienese.
Annual Sales	: 400 million Bahts/Total Assets: 30 million Bahts
Products:	
Canned Products:	: Crab meat, shrimps., baby clams, Squids, tuna, sardines, pet foods, lobsters, seafood cocktail and akagi.
Frozen Seafood:	: Shripms, baby clams, kisu fish, and squids.
Brand names	: Sunny Sea and South Sea

THAI UNION MANUFACTURING CO., LTD. Tel. 223-0111-3
28-32 Yukol 1 Rd., Suan Mali, Bangkok.

Chairman	: Mr. Chavalit Chinthammit
Managing Director	: Mr. Kraisorn Chansiri
General Manager	: Mr. Chan Han Seng
Employees	: 300
Shareholders	: 80% Thai
Registered Capital	: 60 million baht/Paid-up Capital 40 million baht
Total Assets	: 20 million baht/Annual Sales: 150 million baht.
Products:	
Canned (in oil)	: Big eye tuna chunk bonits chunk;
Canned (in brine)	: Shredded tuna, tuna chunk, baby clams;
Canned (in natural juice)	: Squid; crab meat grade A, crab meat grade C, flaked crab meat, crab neat fabct grade, tuna pet

(cont.)

(Annex C. Cont.)

food, sardine pet food, crushed saxdine pet food.

Brand names : Great Ocean, Glygoere, Empress, Gift of the Sea, TUM, Supercat, 9 Lives, Meow, Pathmark, Cha Cha Cha, My Favorite, Grand, Tuna 4 Cats, EL Dorado.

SIAM SEAFOOD CO. LTD. Tel: 286-6530-5
17 Soi Saint Louis 3, Sathorn Tai Rd., Bangkok 12

Chairman	: Mr. Kaew Rachataswan
Managing Director	: Mr. Anuparb Wongnak
Employees	: 100
Shareholders	: 94.2% Thai, 2.8% Chinese, 2.8% French, 0.2% German.
Registered and Paid-up Capital	: 5 million bahts/Total Assets 8.8 million bahts (1980)
Products	: Canned Seafoods
Brand name	: SSF

TTT GROUP OF COMPANIES. Tel: 286-6530-35
17 St. Louis Sri 3, South Sathorn Road, Bangkok.

Product	: Canned Mackerel Fillet in Gil, White Meat Tuna, etc. Baby clams, Squide in Hot Sauce.
Brand Names	: Pataya, JAP, Admiral, Geisha, Madam, Carnation, Goddess, Swift's, S&W, Pagoda, Armour, Pandalore, Deep Blue, etc.

SAFCOL (THAILAND) LIMITED. Tel: 289-1982-4
1888-1890 New Road, Yannawa, Bangkok Thailand.

Product	: Canned Tuna, Crabmeat, Baby clams, Shrimp, Lobster meat, Sardines, Squids, Petfood.
Brand names	: SAFCOL, Island Sun, JAP, EL Dorado, Monarch, Condor, Chamits, etc.

(cont.)

(Annex C. cont.)

LUXCO FOODS CO. LTD. Tel: 466-8699, 465-0430
1075 Charoennakorn, Klongsan, Bangkok.

Manager	: Mr. Boonchai Pornyuenyong
Products	: Canned Sea Food: Tuna, Crab Meat, Squid, etc.

SAHA THAI SEAFOODS LTD. PART. Tel: 211-3118, 211-0125
17 Charoenkrung Rd., Yanawa, Bangkok.

Manager	: Mr. Saha Srisaowapha
Products	: Canned Sea Food.

THAI CANNERY CO. LTD. Tel: 279-3528, 279-2436
17/8 Pradipat Rd. Bangkok.

President	: Mr.Udom Vithayasirinant
Products	: Canned Seafood.

UMC INTERNATIONAL CORPORATION LTD. Tel: 223-2160-2, 223-2164
177 Rajawongse Rd., Samphanthawongse Rd.

Manager	: Mr. Suk Sripaiwan
Products	: Canned Marine Products

ANNEX D.

List of Carton and Box (Paper) Manufactures of Thailand: 1982:
(These are classified as Small and Medium enterprises).

NAME OF FIRMS	CAPITAL INVESTED (MILL. BAHT)	NUMBER OF EMPLOYEES	PRODUCTION VOLUME (UNITS)
IN BANGKOK			
SAHA CHOL KARN CHANG	0.080	2	2 mill/y
CHAROEN FAH	0.120	4	-
SAHAKIJ PALIT KLONG	0.872	7	200/d
ASA INDUSTRY	4.000	57	20,000/d
KLONG KRADAD KRUNGTHEP	3.600	47	-
KLONG KRADAD SRINAKORN	-	-	170,000/m
DIEW NAM	0.770	5	4,500/m
SAKDI WATTANA KLONG KRADAD	24.000	30	15,000/d
T. PRASERTSILAPA	0.09	3	20,000/m
KLONG KRADAD ASIA	0.10	4	5,000/m
SILAPA WILAI LERT	0.90	4	15,000/m
SAHA MITR	0.10	5	600,000/y
SAENG CHAROEN	0.137	8	12,000/m
KLONG KRADAD C.VANICH	0.24	5	9,000/m
KUM PUMP KLONG	0.08	4	10,000/m
SAENG PAKORN	0.40	3	-
KLONG KRADAD THAI	-	137	12 mill/y
TANG NUM HUAT	0.02	7	-
TANG HONG HUAT	0.01	8	250,000/y
KHENG KEE	0.04	12	-
CHAI CHAROEN HATAKARM	0.05	3	5,000/m
SIRI KITCHAKARN	0.10	3	200/d
SUN SOMBAT	0.10	15	50,000/y
NGIAB UNG	0.015	3	100,000/y
EIAM LEE KARN CHARNG	0.02	3	15,000/m
SAENG SAMRET	0.044	3	3,500/m
TIAM HUAT	0.015	1	156,000/y
P. VICHIT KARN PIM	0.05	3	-
BANNA-SILPA	0.02	17	15,000/d
NARONG-SILPA	0.151	5	-
USAHAKAM THAI KLONG KRADAD	0.40	14	400,000/y
MUANG THONG USAHAKAM KLONG KRADAD	0.08	6	3,600/m
SRI-THON KLONG KRADAD	0.30	5	-

(cont.)

(Annex D. cont.)

NAME OF FIRMS	CAPITAL INVESTED (MILL. BAHT)	NUMBER OF EMPLOYEES	PRODUCTION VOLUME (UNITS)
KIM NGUAN BROTHERS	0.10	8	360,000/y
NUM HIEAH	0.08	8	7,500/m
WANG KIENG CHAE	0.13	2	48,000 kg/y
KIA TAI-UNG	0.20	2	-
KAEW-FAR USAHAKAM	0.20	5	4,500 kg/m
YONG SENG HUAT	0.125	2	3,500/m
THAI PRASIT	0.13	7	10,000/m
USAHAKAM THAI BANCHUPHAN	9.90	32	95 tons/m
USAHAKHAM KLONG KRADAD KRUNGTHAI	0.92	10	250 tons/m
DUANG DAO KARN PIMM	0.40	30	30,000/m
THAI RUNG SAENG	0.50	9	30,000/m
LIM TECK SENG	0.10	4	10,000/m
NIYOM SILAPA	0.187	5	125,000/m
KLONG SAHA SILAPA	0.213	6	1,500/m
SRI THON USAHAKHAM	1.0	17	20 tons/m
KLONG KRADAD NAKORN LJANG	0.32	7	30 tons/m
KLONG KRADAS SAKOL	0.30	4	3,000/m
THAI CHAROEN USAHAKHAM	0.590	5	500/m
CHAI SENG	0.87	4	10,000/m
NGEE HENG TRADING	0.127	3	7,750/m
KLONG KRADAD MITRAPARB	0.33	5	1,000/m
SAKOL BANCHU PHANT	12.414	47	147 tons/m
SOMCHAI KARN CHANG	0.10	3	1,000/m
SIRIKIJ	0.17	2	1,500/m
SAENG PA-KORN	3.60	21	40,000/m
ASIA USAHAKHAM BANCHUPHAN	2.0	18	13,000/m
G. TAE CHAU HUAT	0.10	4	2,000/m
KITCH SILAPA	0.05	7	-
HAI SENG	0.01	5	-
IN SAMUT PRAKAN			
PANCHAPOL FIBER CONTAINER	10.00	40	15,000 tons/y
SAENG NGARM USAHAKHAM	6.40	66	-
THAI MOLASSES	0.004	47	650,000/y
SIAM BANCHUPHAN	21.791	97	9.6 mill/y
CHAI-HUA	1.00	7	4 mill/y
WATTANA BANCHUPHAN	4.8	20	1.5 mill/y
NIYOM CHANG BANCHUPHAN	44.9	25	600 tons/
IN CHIANG MAI			
SONGSERM TURA KITCH	4.12	20	200,000/y

ANNEX E.

Standards which must be met by cans used in Export Oriented Marine Products Manufacturing of Thailand:1982

TIS: 90-2517
Standard for food containers made of tinplate, round cans, B.E. 2517 (A.D. 1974).

IS: 3257-1966
Methods for Sampling of metal containers. Indian Standards Institution.

ISO: 1361-1972
Hermetically sealed metal food containers. Internal diameters of round cans. International Organization for Standardization.

ISO/R-90-1959
Hermetically sealed metal food containers. International Organization for Standardization.

ISO-2735-1973
Hermetically sealed metal food containers. Capacities and diameters of round open top and vent hole cans for milk. International Organization for Standardization